L 43038-65

ACCESSION NR: AT5007918

(3) Radiotekhnicheskiy institute AN SSSR (Radio Engineering Institute, Academy of Sciences SSSR). (4) Gosudarstvennyy proyektnyy institut GKAE SSSR (State Planning Institute, GKAE SSR).

SUBMITTED: 26May64

ENCL: 00

SUB CODE: EE, NP

NO REF SOV: 002

OTHER: 001

Card 4/4

IVANITSKIY, V.Yu.; YAKOVLEV, B.N., spets. red.; VASIL'YEV, A.A.,
red.

[Advice to radio amateurs] Sovety radioliubiteliu. Mo-
skva, DOSAAF, 1964. 223 p.   (MIRA 17:12)

YAKOVLEV, B.P. (Chuvashskaya ASSR)

Master of her work. Med. sestra 20 no.6:54-55 Je '61. (MIRA 14:7)
(STEPANOVA, ALEKSANDRA IVANOVNA)

USSR/General and Systematic Zoology. Insects. Harmful   P
          Insects and Acarids. Forest Pests.

Abs Jour : Ref Zhur - Biol., No 3, 1959, No 11665

Author   : Shiperovich V.Ya., Yakovlev B.P.
Inst   : Institute of Zoology AS KazSSR. KARELSK AFFIL. AS USSR
Title   : Harmful Insects and Spruce Restoration on Cleared
           Spaces in Karelia.

Orig Pub : Entomol. obozreniye, 1957, 36, No 3, 632-639

Abstract : The reason for the weakening and for the drying
           of the spruce underbrush (U) and saplings (S) on
           hewn-out areas is due to a sharp change in the
           environmental medium (as a result of chopping
           down the maternal canopy) and also by the subse-
           quent activity of harmful insects. The greatest
           destruction of S takes place in the first 4 years
           after hewing. At a grouping, curtain arrangement

Card   : 1/2

USSR/General and Systematic Zoology. Insects. Harmful   P
          Insects and Acarids. Forest Pests.

Abs Jour : Ref Zhur - Biol., No 3, 1959, No 11665

          of U, the latter is less exposed to insect invas-
          ion and is generally better preserved than at a
          solitary, dispersed arrangement of the young spruce
          on the hewn-out areas. The greatest importance
          among the U and S pests have the pinechafer
          (Hylobius abietis) and the bark beetle (Hylastes
          cunicularius). Besides, the young spruce is very
          often damaged by Chormes abietis, Pissodes harcyniae,
          Pityogenes chalcographus, Ips duplicatus, and
          Pogonochaerus fasciculatus and Orthotomicus proxi-
          mus are often encountered on dead trees. To pre-
          vent a mass propagation of the pests and to in-
          crease the resistance of S and U against the in-
          vasion of insects, it is recommended to employ
          chopping methods which would safeguard the group-
          ing arrangement of U. -- V.I. Grimal'skiy.

Card   : 2/2

- 45 -

_Yakov ___, / ___

USSR/Forestry - Forest Biology and Typology.   K-2

Abs Jour   : Ref Zhur - Biol., No 5, 1958, 20109

Author   : Shiperovich, V.Ya., Yakovlev, B.P.
Inst   : -
Title   : The Effect of Pathological Factors on the Resistance of
               Undergrowth and Saplings in the Glades of the South
               Karelian Spruce Forests.

Orig Pub   : Tr. Karel'sk. fil. AN SSSR, 1957, vyp. 7, 46-68.

Abstract   : Investigations held at the laboratory for forest pathology
               of the Karelian affiliate of the Academy of Sciences SSR
               in 1952-1954 have established that spruce underwood viabi-
               lity in densely concentrated glades is considerably higher
               when the undergrowth is disposed in groups. When broad-
               cast the major portion of the undergrowth dies off. The
               resistance of the spruce underbrush increases in time,
               whereas the viability of those grouped increases faster
               than those scattered.

Card 1/2

- 28 -

USSR/Forestry - Forest Biology and Typology.   K-2

Abs Jour   : Ref Zhur - Biol., No 5, 1958, 20109

           Insect pests attack the underwood particularly strongly
           during the period of the first three years after felling,
           during physiological plant depression. Beginning with
           the 5th year the large scale loss of undergrowth is checked
           through the resumption of its physiological activity and
           sharply curtailed number of pests. The pests are divided
           into 3 biological groups according to the degree of damage
           they inflict on underwood, their basic species are descri-
           bed together with the nature of their activities. The
           dynamics of underwood growth in clearings is characterized.

Card 2/2

USSR / General and Specialized Zoology.   Insects   P
            Forest Pests.

Abs Jour   : Ref Zhur - Biol., No 17, 1958, No 78362

Author   : Shiperovich, B. Ya.; Yakovlev, B. P.
Inst   : Karolian Branch AS SSSR
Title   : Influence of Insect Pests on the Quality of Seeds
             in the Forests of Karelia.

Orig Pub   : Tr. Karel'sk. fil. AN SSSR, 1957, fasc. 7, 97-109

Abstract   : In the last few years, damage to spruce cones has
             been 90%. Most of the damaged cones were popula-
             ted by the cone tortricid moth (Lasperiesia stro-
             biella), the remainder by a complex of a few
             insects: the coniferous moth (Dioryctia abie-
             tella) and geometrid moth (Eupithecia abietaria),
             gall midge of the scales of the spruce cones
             (Dasyneura strobi) gall midge of the spruce
             seeds (Plemeliella abietina), Larch

Card 1/2

USSR / General and Specialized Zoology. Insects. Forest   F
              Pests.

Abs Jour   : Ref Zhur - Biol., No 17, 1958, No 78362

              fly (Hylemyia laricicola). The opening of the ripe cones
              depends on the species of the insect and on the extent of the
              damage to it. The seeds from the damaged cones lose ger-
              mination energy and are 2-3 times less germinative than
              those from undamaged cones. In the cones were also found
              in a great number parasites of the posts, particularly para-
              sitic Chalcids. Investigations of the quantity and quality
              of the seeds from the damaged cones indicate that it is not
              advisable to collect the cones if most of them are damaged
              by the caterpillars of tortricid, pyralid moths and rust
              fungi. Freliminary entomo-phytopathological analysis of the
              cones for the organization of procurement of the spruce
              seeds is necessary. --- A. F. Adrianov.

Card 2/2

YAKOVLEV, B.P.

Resin gall-moth and its role in the formation of rotten spots in pine trees in Karelia. Izv.Kar. i Kol'.fil.AN SSSR no.3:103-106 '58.

(MIRA 11:12)

1. Institut lesa Karel'skogo filiala AN SSSR.
(Karelia--Pine--Diseases and pests) (Moths)

SHIPEROVICH, V.Ya.; YAKOVLEV, B.P.; VOLKOVA, I.P.

How pine weevil (Hylobius abietis L.) affects the regenera-
tion of conifers on areas of clearcutting in Karelia. Trudy
Kar.fil. AN SSSR no.16:94-109 '59.   (MIRA 13:4)
        (Karelia--Pine--Diseases and pests)

YAKOVLEV, B.P.

Biology of the gall gnat Kaltenbachiella strobi Winn. (Diptera, Itonididae) injurious to spruce cones. Ent.oboz. 38 no.1:129-134 '59.   (MIRA 12:4)

1. Laboratoriya entomologii Karel'skogo filiala AN SSSR, Petrozavodsk.
    (Karelia--Gall gnats)   (Spruce--Diseases and pests)

SHIPEROVICH, V.Ya.; YAKOVLEV, B.P.; RAYEVSKAYA, V.S., red.; SHEVCHENKO,
        L.V., tekhn.red.

        [Methods of determining the quality of seeds in spruce cones
        injured by insects and fungi] Metody opredeleniia godnosti
        elovykh shishek, povrezhdennykh nasekomymi i gribami. Petro-
        zavodsk, Gos.izd-vo Karel'skoi ASSR, 1960. 15 p.
                (Spruce--Diseases and pests)   (MIRA 14:1)

YAKOVLEV, B.P.

The larch fly Hylemyia laricicola Karl (Diptera, Anthomyidae damaging spruce cones and seeds in Karelia. Ent. oboz 39 no.4:802-805 '61.
(MIRA 14:3)

(Karelia--Flies)   (Spruce--Disease and pests)

YAKOVLEV, Boris Petrovich; SHEKHTER, D.I., red.; SHEVCHENKO, L.V.,
          tekhn. red.

     [Pests of spruce cones and seeds] Vrediteli shishek i semian
     eli. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1961. 46 p.
                                                    (MIRA 16:7)
          (Karelia—Spruce—Diseases and pests)
               (Karelia—Seed production)

YAKOVLEV, B.P.

Gastric and duodenal phlegmon. Khirurgiia Supplement:43-44 '57.
(MIRA 11:4)

1. Iz Yarinskoy rayonnoy bol'nitsy Chuvashskoy ASSR.
(STOMACH—DISEASES)   (DUODENUM—DISEASES)
(PHLEGMON)

YAKOVLEV, B. P., inzh. (Tallin)

Visiting Cuban railroad workers. Put' i put. khoz. 7 no.3:
31-33 '63.   (MIRA 16:4)

(Cuba—Railroads—Track)

YAKOVLEV, B.P. (Tallin)

'With the railroaders of the Czechoslovak Socialist Republic. Put'
i put'khoz. 8 no.8;47 '64.   (MIRA 17;9)

21181
S/141/60/003/006/020/025
E192/E382

16.9500 (1031, 1121, 1132)

AUTHOR: Yakovlev, B.

TITLE: Methods of Choosing the Parameters of the Correction
Circuits in Automatic Control Systems by means of
Nomograms

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiofizika, 1960, Vol. 3, No. 6, pp. 1093-1106

TEXT: A method of choosing the parameters of the correction
circuits, based on the frequency representation of the
characteristics of the system, is considered. The original
ideas for this method are based on the work of Kislov (Ref. 1).
The structure of various control systems can be represented
as shown in Fig. 1. The individual elements of this system
have the following transfer functions: W_1 - the transfer
function of the input element; W_K - that of the correction
element; W_{op} - that of the controlled object; W_y - that of
the amplifying stage and $W_{\text{по}}$ that of the output element.

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Methods of Choosing ....

S/141/60/003/006/020/025
E192/E382

21181

Independently of the method of connecting the correction circuit in the system, the structure of the system can be so transformed that the transfer function consists of two factors: W_K, which represents the transfer function of the correction and W_0, which represents the transfer function of the rest of the system. The characteristic equation of the system is therefore in the form:

$$W_K(p)W_0(p) + 1 = 0 \qquad\qquad (1)\ .$$

If the real and the imaginary parts of Eq. (1) are equated to zero, the system is at the boundary of the stability when this condition is fulfilled. In the case of a correcting circuit of the first order, the transfer function of the circuit is in the form:

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21101

S/141/60/003/006/020/025
E192/E382

Methods of Choosing ....

$W_K = (T_1 p + 1)/(T_2 p + 1)$. A suitable nomogram is constructed for choosing the parameters T_1 and T_2 . This is based on assuming that ωT_2 = const. and changing ωT_1 from zero to infinity. This operation is performed for various values of ωT_2 and a number of curves representing ωT_1 = var and ωT_2 = const. are constructed. The points with equal values of ωT_1 are connected by curves and a grid of curves is obtained; this is the desired nomogram. An example of such a nomogram is shown in Fig. 2. The transfer function of a correction circuit of the second order can be represented by:

$$W_\kappa = \frac{l_2 p^2 + l_1 p + 1}{a_2 p^2 + a_1 p + 1} = \frac{T^2 p^2 + 2\xi T p + 1}{(T_{su} p + 1)(T_l p + 1)},$$

Card 3/6

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S/141/60/003/006/020/025
E192/E382

Methods of Choosing ....

Again, it is shown how a suitable nomogram can be constructed
for this system. Further, the problem of obtaining the
required margin of stability, while ensuring a minimum
attenuation of the circuit, is also discussed. One of the
basic difficulties in determining the correction circuit by the
nomogram method lies in the fact that the choice of the
quantity ζ, which gives the maximum margin of stability,
requires the determination of the stability regions and the
lines of the equimarginal stability for amplitudes and phases
for various values of ζ. Consequently, a method permitting
an approximate determination of ζ without resorting to
the determination of the stability regions is indicated.
There are 16 figures and 1 Soviet reference.

ASSOCIATION: Ural'skiy politekhnicheskiy institut
               (Ural Polytechnical Institute)

SUBMITTED: May 24, 1960

Card 4/6

Methods of Choosing ....

Fig. 1:
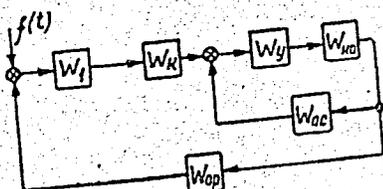
Рис. 1.

Card 5/6

21181

Methods of Choosing ....

Fig. 2:
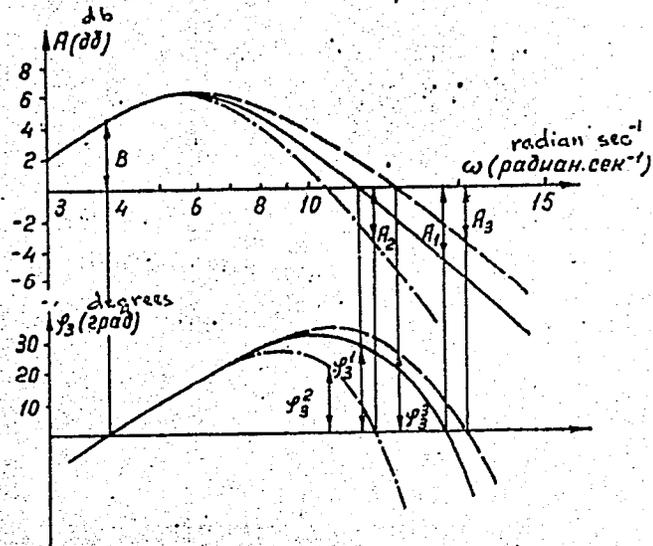
Card 6/6

L 18587-65   EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/EWA(h)   Pc-4/Pr-4/Peb/Pu-4
AP(---)-2/AFETR/ASD(a)-5/ESD/ESD(t)   GG/RM
ACCESSION NR: AP4042883   S/0062/64/000/007/1357/1358

AUTHOR: Frankevich, Ye. L.; Yakovlev, B. S.

TITLE: Intrinsic photoeffect in solid pentane irradiated with fast electrons

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1964, 1357-1358

TOPIC TAGS: fast electron, fast electron irradiation, pentane, irradiation,
photoeffect, electric conductivity, radiation chemical process

ABSTRACT: The electric conductivity   brought about by irradiation of pentane
at 80 K with electrons of 1.6 Mev energy was measured in this study of charged
particle formation in organic materials by irradiation and its role in radiation
chemical processes. The magnitude of σ depended on the dose rate I according to
the relation $\sigma = kI^\Delta$, where Δ increased from 0.55 to 0.98 as I increased from
6×10^{-3} to 4 Mrad/min. Such a relationship is described by a model in which the
capture and recombination of current carriers excited by fast electrons takes
place by means of traps of one sort which are available in the materials before

Card   1/2

L 18587-65
ACCESSION NR: AP4042883   /

irradiation. Illuminating the sample during or immediately after irradiation increased the electric conductivity. The observed change in the photosensitivity spectrum of the sample with increasing irradiation dosage (to 100 Mrad) is apparently associated with the appearance of traps formed in the course of irradiating the organic materials. Orig. art. has: 1 figure.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics Academy of Sciences SSSR)

SUBMITTED: 22Apr64   ENCL: 00

SUB CODE: NP,   OC   NO REF SOV: 000   OTHER: 000

Card 2/2

YAKOVLEV, B.S. (Chelyabinsk)

Study of automatic control systems with delay using nomograms of the dyanamic links. Izv. AN SSSR. otd. tekh. nauk. tekh. kib. no.3:177-181 My-Je '63.   (MIRA 16:7)

(Automatic control)

FRANKEVICH, Ye.L.; YAKOVLEV, B.S.

Concentration of ions accumulated in saturated hydrocarbons irradiated at low temperature. Izv.AN SSSR.Otd.khim.nauk no.9:1699 S.'62.

(MIRA 15:10)

1. Institut khimicheskoy fiziki AN SSSR.
   (Hydrocarbons)   (Ions)   (Radiation)

YAKOVLEV, B.S.

Method for the analysis of automatic control systems by means of homograms. Izv.vys.ucheb.zav.; prib. 6 no.3:36-44 '63.
(MIRA 16:9)

1. Chelyabinskiy politekhnicheskiy institut. Rekomendovana kafedroy avtomatiki i telemekhaniki.

L-9902-63   EPF(c)/EWP(j)/EWT(m)/BDS--Pr-4/Pc-4--RM/MAY/WW/JFW

ACCESSION NR: AP3000420   S/0076/63/037/005/1106/1112

                                                              68

AUTHOR: Frankevich, Ye. L.; Yakovlev, B. S.   65

TITLE: Relaxation polarization in saturated hydrocarbons irradiated at low temperatures.

SOURCE: AN SSSR. Zhurnal fizicheskoy khimii, v. 37, no. 5, 1963, 1106-1112

TOPIC TAGS: high voltage polarization, radiolysis, free radicals, saturated hydrocarbons

ABSTRACT: The irradiation of saturated hydrocarbons such as hexane, heptane, nonane, decane, undecane and tetradecane with 50 Mrads at liquid nitrogen temperature has revealed relaxation electrical processes or high voltage polarization. A mechanism has been proposed for the explanation of the observed relaxation processes which consists of a charge redistribution in certain types of ions. This movement of charges in such ions may be due to H sup + or H sup - migration. Migration of H sup + and H sup - between neighboring molecules is hindered. The activation energy of H sup + or H sup - migration in hexane has

Card 1/2

L 9902-63
ACCESSION NR: AP3000420   3

been calculated to be 0.06 + or - 0.02 ev under the effect of 50 Mrad doses.
The ion concentration shows that the contribution of the reactions of charged
particles in radiolysis processes of saturated hydrocarbons can be attributed
to the participation of free radicals. /The high voltage polarization effect
consists of a slow drop of current when the voltage is applied to the electrodes
of the irradiated products. When the voltage is switched off, a slowly-
diminishing reverse current is observed. The rise and fall of current is
characterized by a time constant T sub m, of several tens of seconds which
increases with the increasing chain length. "The authors are grateful to
V. L. Tal'roze for the interest in this work and for valuable consultations."
Orig. art. has: 7 figures.

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki (Academy of
Sciences SSSR, Institute of Chemical Physics)

SUBMITTED: 04Jul62   DATE ACQ: 19Jun63   ENCL: 00

SUB CODE: 00   NR REF SOV: 020   OTHER: 006

Card 2/2

ACCESSION NR: AP4024679   S/0103/64/025/002/0177/0187

AUTHOR: Yakovlev, B. S. (Chelyabinsk)

TITLE: Method for selecting automatic-control-system parameters from the specified regions of distribution of poles and zeros

SOURCE: Avtomatika i telemekhanika, v. 25, no. 2, 1964, 177-187

TOPIC TAGS: automatic control, automatic control parameters, automatic control theory, automatic control parameter selection, automatic control parameter nomogram

ABSTRACT: The necessary distribution of poles and zeros in the transfer function of a closed-loop n-th-order automatic-control system is determined on the basis of specifications describing the transient processes in the system. Dynamic-element parameters can be determined from the author's nomograms published earlier (IVUZ. Radiofizika, no. 6, 1960). Formulas are presented for

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ACCESSION NR: AP4024679

calculating the dynamic elements of the form of $p^N W_\lambda(p)$, where $W_\lambda(p)$ is of the first or second order and $N \gtrless 0$. The author believes that "in combination with other well-known methods of determining majorants and minorants with relative distribution of poles and zeros, etc., this method may be used for synthesizing n-th order automatic-control systems on the basis of a specified quality of transient processes." Orig. art. has: 9 figures, 30 formulas, and 2 tables.

A   JCIATION: none

SUBMITTED: 27Mar63   DATE ACQ: 15Apr64   ENCL: 00

SUB CODE: CG, IE   NO REF SOV: 009   OTHER: 000

Card 2/2

L 26544-66   EPF(n)-2/EWA(h)/EWP(j)/EWT(m)/EWA(1)   GG/RM   -

ACC NR: AP6017358   SOURCE CODE: UR/0062/66/000/003/0402/0407

AUTHOR: Yakovlev, B. S.; Frankevich, Ye. L.

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Investigation of the ionized states in irradiated saturated solid hydrocarbons

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 402-407

TOPIC TAGS: hydrocarbon, photoconductivity, electron trap, alkyl radical, radiation chemistry

ABSTRACT: Photoconductivity in saturated hydrocarbons irradiated at low temperatures is associated with the freeing of electrons stabilized in traps, under the effect of light. Electron traps which apparently are alkyl radicals emerge in the radiolytic process in the substances studied. The spectral form of photoconductivity after irradiation with a dose of 0.3 megarads is determined by the electrons stabilized in the radicals. Thermostimulated conductivity of the irradiated saturated hydrocarbons is principally caused by the movement of the positive charges. Orig. art. has: 6 figures and 1 formula. [JPRS]

SUB CODE: 07, 20 / SUBM DATE: 01Oct65 / ORIG REF: 008

Card 1/1   UDC: 537.57 + 547.21

L U04/1-0/   ENF J//EFI\I//ENI\M/   IJF\C/   AI/RM

ACC NR: AP6029213   SOURCE CODE: UR/0076/66/040/006/1327/1332

AUTHOR: Yakovlev, B. S.; Frankevich, Ye. L.   66
                                                                               65
ORG: none   13

TITLE: Electric conductivity and photoconductivity induced by electron irradiation in frozen heptane

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 6, 1966, 1327-1332

TOPIC TAGS: heptane, photoconductivity, electric conduction, electron trapping, irradiation effect, electron radiation, electron recombination

ABSTRACT: Measurements of the electric and photoconductivity induced by 1.6 MeV electrons in frozen heptane were carried out at a temperature close to 77°K. From the kinetic standpoint, the close-to-linear dependence of the electric conductivity on the dose rate indicates that the removal of current carriers is a first-order process; this is possible only when the carrier recombination proceeds via traps. During the radiolysis, new traps accumulate which apparently are free radicals. Photoconductivity was manifested in heptane following the irradiation. The photoelectric effect is due to the liberation of carriers from the traps by the light. The dependence of the photocurrent on the irradiation dose made it possible to follow the kinetics of accumulation of electrons in traps present in heptane before the irradiation. When the concentration of deep traps in the solid phase is high, the electric conductivity may

Card 1/2   UDC: 541.15

L 06471-67

ACC NR: AP6029213   /

involve electrons seized by a trap in the field of "their own" positive ion. Recombi-
nation of electrons with "foreign" ions is possible. In addition to heptane, photo-
conductivity was also observed in hexane, octane, paraffin and ethyl alcohol. It is
concluded that the study of photoconductivity may be used to study the processes of
formation and accumulation of ions during radiolysis of organic compounds. Orig. art.
has: 5 figures and 4 formulas.

SUB CODE:07,20/ SUBM DATE: 23Nov64/ ORIG REF: 005/ OTH REF: 010

Card   2/2 nil

VAKHRAMEYEV, I.I.,doktor tekhn.nauk; YAKOVLEV, B.T.,inzh.

Comments on G.L.Rozenblit's article "Expediency of using tower headframes for multirope hoisting units." Shakht. stroi. 4 no.3:14-16 Mr '60.   (MIRA 13:11)

1. Sverdlovskiy gornyy institut.
        (Mine hoisting) (Rozenblit, G.L.)

YAKOVLEV, B.T., inzh.

Possibility of using multirope hoists as sinking machines.
Izv. vys. ucheb. zav.; gor. zhur. no.6:161-165 '61.
(MIRA 16:7)
1. Sverdlovskiy gornyy institut imeni Vakhrusheva. Rekomendovana
kafedroy stroitel'noy mekhaniki.
(Mine hoisting)

YAKOVLEV, B.T., inzh.

Economic efficiency of tower headframes. Izv. vys. ucheb. zav.; gor. zhur. 6 no.7:56-64 '63. (MIRA 16:9)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy stroitel'noy mekhaniki Sverdlovskogo gornogo instituta.
     (Shaft sinking—Equipment and supplies)

VAKHRAMEYEV, I.I., prof.; DOBRODEYEV, S.A., dotsent; YAKOVLEV, B.T.,
    starshiy prepodavatel'

Free horizontal vibrations of tower headframes with bearing
walls in the shape of a rectangle or a circle in a plane.
Izv. vys. ucheb. zav.; gor. zhur. 6 no.8:129-133 '63.
                                            (MIRA 16:10)

1. Sverdlovskiy gornyy institut imeni V.V. Vakhrusheva.
Rekomendovana kafedroy stroitel'noy mekhaniki.

VAKHRAMEYEV, I.I.,prof.; DOBRODEYEV, S.A., dotsent; YAKOVLEV, B.T., starshiy
        prepodavatel'

Method of designing reinforced concrete tower-type headframes
with carrying walls calculated for forced oscillations. Izv. vys.
ucheb. zav.; gor. zhur. 6 no.9:54-63 '63.   (MIRA 17:1)

1. Sverdlovskiy gornyy institut imeni V.V. Vakhrusheva.
Rekomendovana kafedroy stroitel'noy mekhaniki.

YAKOVLEV, B.V., kand.sel'skokhoz.nauk (Moskva)

For harvest protection. Priroda 51 no.9:116-117 S '62.
(MIRA 15:9)

(Plants, Protection of)

7 ACYL., ...

The Colorado potato beetle and preventative measures   Moskva, Gos. izd-vo solkhoz
lit-ry. 1950. 63 p.

DA

1. Potato-beetle.   2. Insects, Injurious and beneficial - Russia.

YAKOVLEV, B.

Tho Colorado potato beetle Moskva "Molodaia Gvardiia", 1950. 47 p.

DA

1. Potato-beetle.   I.   IAkovlev, B.

YAKOVLEV, D.

USSR / General and Special Zoology. Insects.   P

Abs Jour: Ref Zhur-Biol., No 3, 1958, 11735

Author : Yakovlev B.
Inst   : Not given
Title   : Methods of Agrotechnical Control of the Colorado
          Beetle.

Orig Pub: Zemledelie, 1956, No 11, 63-70.

Abstract: Chemical control of beetles secures the protection
          of potatoes only when used in combination with
          agrotechnical measures: potato field fertilization
          to be mixed with insecticides (especially with
          chlorindane); sowing after potatoes of crops that
          can be plowed; the planting of potatoes in humus-
          rich soils (or soils enriched with organic fertili-
          zers) in early and post-harvest periods with healthy
          vernalised tubers of varieties which restore rapidly

Card 1/2

USSR / General and Special Zoology. Insects.   P

Abs Jour: Ref Zhur-Biol., No 3, 1958, 11735

Abstract: the green mass; wrapping up of the sprouts (cover-
ing them with 5 cm of soil); feeding the potatoes
with fertilizers which raise their resistance to
the highest level (calcium cyanamide and others);
non-root feeding of the potatoes together with
chemical control; composting the leaves after the
harvest or mowing them down two to three days
before the harvest.

Card 2/2

YAKOVLEV, B.

Potato beetle.   IUn.nat. no.5:25 My '57.   (MIRA 10:7)

1. Ministerstvo sel'skogo khozyaystva SSSR.
                    (Potato beetle)

YAKOVLEV, B.V.

Measures against the Colorado beetle. Zashch. rast. ot vred. i
bol. 3 no.3:44-46 My-Je '58.   (MIRA 11:6)

1. Zaveduyushchiy sektorom po izucheniyu koloradskogo zhuka TSentral'-
noy karantinnoy laboratorii Ministerstva sel'skogo khozyaystva SSSR.
                        (Potato beetle)

PAVLOVSKIY, Ye.N., akademik, glavnyy red.; GILYAROV, M.S., otv.red.;
    LORKH, A.G., red.; MEL'NIKOV, N.N., red.; FEDOTOV, D.M., red.;
    YAKOVLEV, B.V., red.; ZENYAKIN, L.A., red.; SABLINA, T.B.,
    red.izd-va; VOLKOVA, V.V., tekhn.red.

[Transactions of the International Conference on the Study of
the Colorado Beetle and the Development of Measures for its
Control] Trudy Mezhdunarodnogo soveshchaniia po izucheniiu
koloradskogo zhuka i razrabotke mer bor'by s nim. Moskva, Izd-vo
Akad.nauk SSSR, 1959. 329 p.   (MIRA 12:8)

1. Mezhdunarodnoye soveshchaniye po izucheniyu koloradskogo
zhuka i razrabotke mer bor'by s nim, 1956. 2. Mezhduvedom-
stvennaya metodicheskaya komissiya po koloradskomu zhuku.
Akademiya nauk SSSR, Moskva (for Gilyarov). 3. Nauchnyy in-
stitut udobreniy i insektofungitsidov, Moskva (for Mel'nikov).
                (Potato beetle—Congresses)

BULANKINA, M. M.; YAKOVLEV, B. V.; GOLUBINTSEVA, A. P.
DZHIYEMBAYEV, Zh. T.; ZNAMENSKIY, V. S.

Coordination conferences. Zashch. rast. ot vred. i bol. 5
no.5:57-61 My '60.   (MIRA 16:1)

(Plants, Protection of—Congresses)

YAKOVLEV, B. V.

Intensify research on plant immunity. Zashch. rast. ot vred.
i bol. 5 no.11:60-61 N '60.   (MIRA 16:1)

(Plants—Disease and pest resistance)

YAKOVLEV, B.V.

Destroyers of the Colorado beetle. Priroda 49 no.5:35-43
My '60.   (MIRA 13:5)
        (Potato beetle--Diseases and pests)

YAKOVLEV, B.V.

Scientific session on crop protection problems. Zashch. rast.
ot vred. i bol. 7 no.9:57-58 S '62. (MIRA 16:8)

(Plants, Protection of —Congresses)

YAKOVLEV, B.V., kand.sel'skokhoz.nauk

      Scientific problems of harvest protection. Vest. AN SSSR 32
      no.9:138-140 S '62.   (MIRA 15:9)
           (Plants, Protection of)

YAKOVLEV, Boris Vladimirovich, kand. sel'khoz. nauk; ZHARKOVA,
    V.G., red.

    [Role of cultivation practices in the control of farm crop
    pests] Rol' agrotekhniki v bor'be s vrediteliami sel'sko-
    khoziaistvennykh kul'tur. Moskva, Izd-vo M-va sel'khoz.
    RSFSR. 1963. 79 p.   (MIRA 17:4)

RAKITIN, Yu.V., otv. red.; ARKHANGEL'SKIY, N.I., red.; KRETOVICH,
V.L., red.; METLITSKIY, L.V., red.; SHTEYNBERG, D.M., red.
[deceased]; SHCHERBINOVSKIY, N.S., red.; YAKOVLEV, B.V.,
red.; POVOLOTSKAYA, K.L., red.; SUSHKOVA, L.A., tekhn.
red.; VOLKOVA, V.V., tekhn. red.

[Scientific principles in crop protection] Nauchnye osnovy
zashchity urozhaia. Moskva, Izd-vo AN SSSR, 1963. 246 p.
                                        (MIRA 17:1)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im.
V.I.Lenina. 2. Institut fiziologii rasteniy im. K.A.
Timiryazeva AN SSSR, Moskva (for Rakitin). 3. Institut evo-
lyutsionnoy fiziologii im. I.M.Sechenova AN SSSR, Leningrad
(for Yakovlev). 4. Institut biokhimii im. A.N.Bakha AN SSSR,
Moskva (for Metlitskiy).
                        (Crop yields)

YAKOVLEV, B.V., dotsent; TIL'MAN, A.O., dotsent

Some problems in developing a transportation system in the
Dnieper Valley. Transp.stroi. 16 no.1:37-38 Ja '66.
(MIRA 19:1)

1. Dnepropetrovskiy institut inzhenerov transporta.

YAKOVLEV, B.V.

42564. Voprosy Rekonstruktsii Strelochnogo Khozyaystva SSSR. (S Predisl. Red) Sbornik Trudov DIIT'a (Dneporpetr. In-T Inzh Zh-D Transporta Im. Kaganovichal. vyp. 17, 1947 S 17-54--Prodolzh. Nachalo1 /Trudy DIIT'A, vyp 15.1945.

YAKOVLEV, B.V.

GIBSHMAN, Aleksandr Yevgen'yevich; IOANNISYAN, Ashot Isayevich; KONDRAT-
CHENKO, Anatoliy Petrovich; YAKOVLEV, Boris Vonifat'yevich;
BELEN'KIY, N.P., kandidat tekhnicheskikh nauk, redaktor; VLASOV,
D.I., kandidat tekhnicheskikh nauk, redaktor; KHITROV, P.A.,
tekhnicheskiy redaktor.

[Principles of planning railroads] Osnovy proektirovaniia zheleznykh
dorog. Moskva, Gos. transp. zhel-dor. izd-vo, 1954. 459 p.
       (Railroad engineering)   (MLRA 8:2)

YAKOVLEV, B. V.

AID P - 2187

Subject   : USSR/Medicine

Card 1/1   Pub. 37 - 7/19

Authors   : Yakovlev, B. V. and Kern, V. G.

Title   : Use of aerosols obtained by means of compressed air for
                 the disinfestation of passenger cars

Periodical   : Gig. i san., 5, 32-34, My 1955

Abstract   : A method is described and recommended for the extermina-
                 tion of insects in passenger cars by means of DDT solu-
                 tions. The compressed air, which is used for the testing
                 of brakes and is always available in railroad switch yards,
                 transforms these solutions into foggy substances. The
                 cars are sprayed with these DDT aerosols which kill the
                 insects and do not cause any material damage. This dis-
                 infestation method is used now on the Oktyabr'skaya
                 (October) Railroad. Six Russian references (1949-1951).

Institution   : Medical and Epidemiological Station of the Oktyabr'skaya
                 (October) Railroad

Submitted   : Ap 21, 1954

YAKOVLEV, B. V.

AID P - 2891

Subject   : USSR/Medicine

Card 1/1   Pub. 37 - 8/20

Author   : Yakovlev, B. V.

Title   : Cyanidation of passenger railroad cars during short
                exposure and reduced concentration of prussic acid

Periodical   : Gig. i san., 9, 32-34, S 1955

Abstract   : Deals with the problem of the extermination of insects
                in modern metal railroad cars. Recommends a revision
                of the instruction on cyanidation of cars issued in
                1938. 1 ref.

Institution : Medical and Epidemiological Station of the Oktyabr'
                Railroad

Submitted   : Je 26, 1954

KERN, V.G.; YAKOVLEV, B.V.

Experience in desinfection of surfaces with chloramine aerosols.
Zhur.mikrobiol.epid. i immun. 27 no.4:112-115 Ap '56.   (MIRA 9:7)

1. Iz dorozhnoy i Leningrad-Moskovskoy sanitarno-epidemiologicheskoy
stantsii Oktyabr'skoy zheleznoy dorogi.
        (CHLORAMIDE
            aerosols for disinfection of surfaces)
        (DISINFECTION AND DISINFECTANTS
            surfaces, with chloramine aerosols)
        (AEROSOLS
            chloramine for disinfect.)

YAKOVLEV, B. V.,   KERN, V. G.

"Experience of the use of aersols obtained by means of com-
pressed air for the disinsectization and disinfection of
surfaces."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists
and Infectionists, 1959.

YAKOVLEV, B.V.

Rapid cyanide treatment for passenger cars. Gig. i san. 24 no.4:
85-86 Ap '59.   (MIRA 12:7)

1. Iz dorozhnoy sanitarno-epidemiologicheskoy stantsii Oktyabr'-
skoy zheleznoy dorogi.
        (RAILROADS--SANITATION) (HYDROCYANIC ACID)

YAKOVLEV, B.V.; KERN, V.G.

Disinfectant properties of chloramine solutions as related to the
degree of atomization; author's abstract. Zhur.mikrobiol., epid.i
immun. 30 no.11:119 N '59.   (MIRA 13:3)

1. Iz Dorozhnoy sanitarno-epidemiologicheskoy stantsii Oktyabr'skoy
zheleznoy dorogi.
                          (CHLORAMINE)

YAKOVLEV, B.V., kand.tekhn.nauk

Engineering specifications for planning railroads in the
Chinese People's Republic. Zhel.dor.transp. 41 no.3:82-84
Mr '59.   (MIRA 12:6)

      (China--Railroad engineering)

YAKOVLEV, B.V., kand.tekhn.nauk, dotsent

Accuracy of technical and economic calculations in the comparison
of alternate plants. Trudy DIIT no.30:129-133 '60.
(MIRA 14:12)

(Railroads--Economics of construction)
(Railroad engineering)

GIBSHMAN, Aleksandr Yevgen'yevich, prof.; IOANNISYAN, Ashot Isaayevich,
    prof.; KONDRATCHENKO, Anatoliy Petrovich, dots.; YAKOVLEV, Boris
    Vonifat'yevich, dots.; ORLOV, V.N., prof., doktor tekhn.nauk,
    retsenzent; KARASIK, V.Ya., kand. tekhn. nauk, dots., retsenzent;
    BOCHKAREV, N.G., ekonomist, retsenzent; PETROV, M.A., inzh., red.;
    MAKUNI, Ye.V., tekhn. red.

[Fundamentals of the planning and design of railroads]Osnovy
    proektirovaniia zheleznykh dorog [By]A.E.Gibshman i dr. Pod red.
    A.I.Ioannisiana. Izd.2., perer. Moskva, Transzheldorizdat, 1962.
    347 p.   (MIRA 16:1)
                    (Railroad engineering)

TIL'MAN, A.O., dotsent; YAKOVLEV, B.V., dotsent

Develop technical and economic design models of new railroads.
Transp.stroi. 13 no.10:50-52 O '63.   (MIRA 17:8)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo
transporta.

GOL'DSHTEYN, M.N., prof.; ZHEREBTSOV, I.V.; TOL'SKAYA, S.Ye.; FRISHMAN, M.A.;
    LEVANKOV, I.S.; ROZENBERG, A.M.; BELASHOV, D.A.; TSERKOVNITSKAYA, A.I.;
    LAPIDUS, L.S.; YAKOVLEV, B.V.; GUBENKO, Ye.N.; VICHEREVIN, A.Ye., red.

[Preventing the deformation of tracks and structures overlaying
mine workings.] Preduprezhdenie deformatsii puti i sooruzhenii nad
shakhtnymi podrabotkami. Moskva. Transport, 1964. 65p. (Voprosy
geotekhniki, no.8)   (MIRA 18:2)

YAKOVLEV B. YA.
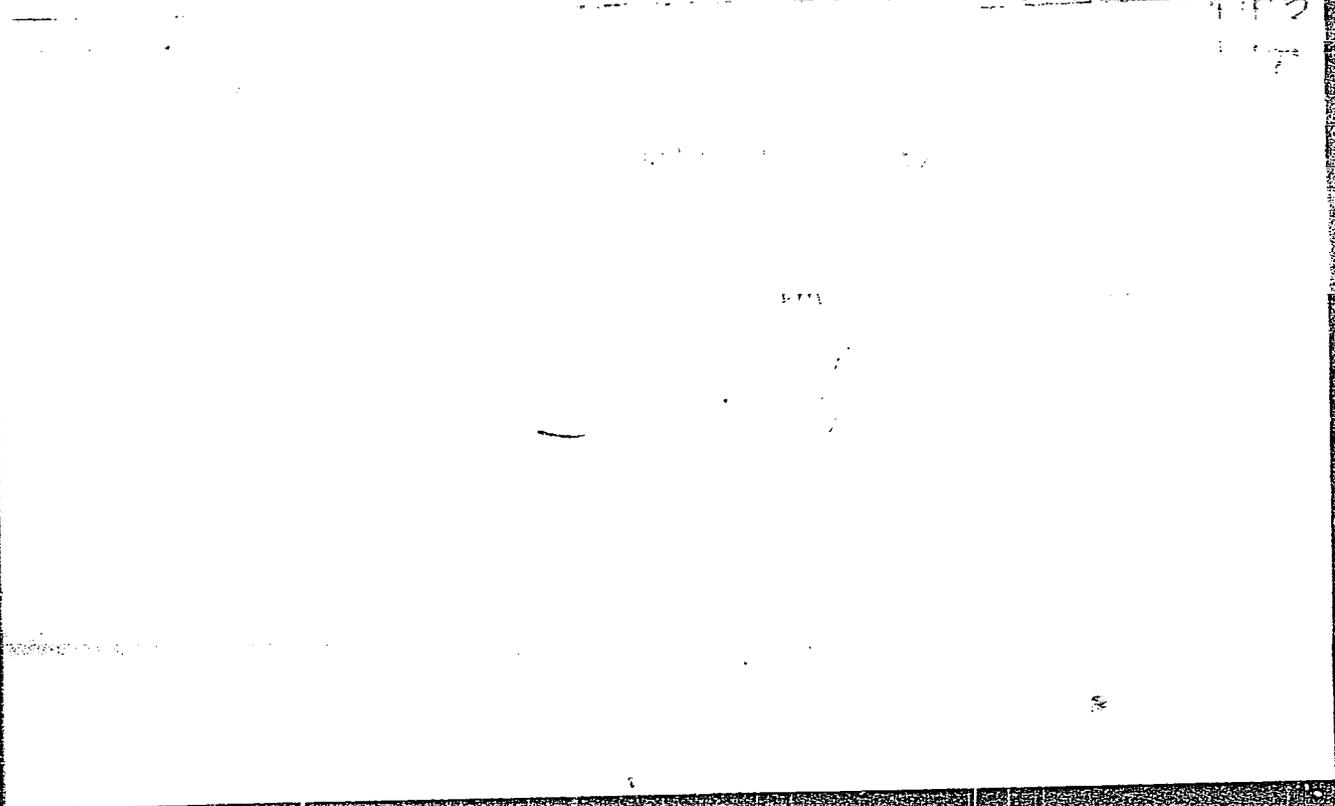
YAKOVLEV, B.Ya., podpolkovnik, voyennyy letchik vtorogo klassa; GAREYEV, V.G.,
mayor, voyennyy shturman pervogo klassa

Transport planes en route. Vest.Vozd.Fl. no.3:46-49 Mr '61.

(MIRA 14:6)

(Transport planes)

YAKOVLEV, Boris Yevgen'yevich; ZVYAGEL'SKIY, M.M., red.; AKKERMAN, D.A., red.; ROGOVSKAYA, Ye.R., red.; KRYUCHKOVA, V.N., tekhn.red.

[Czech-Russian radio engineering dictionary] Cheshsko-russkii radiotekhnicheskii slovar'. Pod red. M.M.Zviagel'skogo. Moskva, Glav.red.inostr.nauchno-tekhn.slovarei Fizmatgiza, 1960. 364 p. (MIRA 14:4)
    (Radio--Dictionaries)
(Czech language--Dictionaries--Russian language)

YAKOVLEV, B.Ye.; MASLYANIKOV, V.A.; MOROZOV, K.V., red.; MURASHOVA,
L.A., tekhn. red.

[Explosion under water] Vzryv pod vodoi. Moskva, Voenizdat,
1963. 74 p.   (MIRA 16:10)
          (Underwater explosions)

YAKOVLEV, D. and VESHCHIKOV, A.

"Keeping Aloof from Economic Problems," Partiynaya Zhizn', No.13, pp. 43-48,
1955

Summary of article   D 399735

YAKOVLEV, D., stalevar-pensioner.

Message from a working pensioner. Sov.profsoiuzy 4 no.10:37 O '56.
(MLRA 9:11)
(Steelworkers)

YAKOVLEV, D.; KUZNETSKIY, G.

Personnel for power engineering. Prof. tekh.obr. 18 no.12:9.
11 D '61.
(MIRA14:12)

1. Remeslennoye uchilishche No.30, Leningrad.
(Electric engineering--Study and teaching)

YAKOVLEV, D.

Color-bearer. Voen.znan. 39 no.9:10 S '63.   (MIRA 16:10)

YAKOVLEV, D. A.

Bacteriophage of lactic acid streptococci. D. A. Yakovlev. *Microbiology* (U. S. S. R.) 8, 932-49(in English, 950)(1939).—This bacteriophage (I) is the cause of retardation and failure of coagulation of milk used in margarine prepn. The I was isolated from a strain of *Streptococcus cremoris*. It is absent in fermented milk. In milk it resists a temp. of 80° for 10 min., or 90° for 5 min. In a dry state it resists 95° for 2 hrs. It induces lysis at pH 5-6.5, and is resistant to lactic acid. The spontaneous lysis during fermentation of pasteurized or sterilized milk by lactic acid bacteria is preceded by agglutination of all bacterial cells. Shaking and stirring stimulate lysis and retard growth in secondary cultures. The latter, when grown on solid media, are temporarily resistant. On liquid media their resistance is lasting, but they remain carriers of I. At the moment of lysis the rH of the milk changes abruptly. Methylene blue is a good indicator for the detection of lysis in fermenting milk. Substitution of resistant bacteria is the only remedy against I under industrial conditions.   T. L.

MELUZOVA, L.Z.; NOVOTEL'NOV, N.V.; YAKOVLEV, D.A.

Biosynthesis of vitamins in lactic acid starters [with summary
in English]. Mikrobiologiia 27 no.6:733-739 N-D '58.

(MIRA 12:1)

1.Leningradskiy tekhnologicheskiy institut kholodil'noy promysh-
lennosti.

(VITAMINS, metab.
biosynthesis in lactic acid forments (Rus)
(LACTIC ACID,
biosynthesis of vitamins in lactic forments (Rus))

YAKOVLEV, D.A., inzh.

Method for harvesting potatoes in stages in the German Federal Republic.
Trakt. i sel'khozmash. 32 no.7:45-46 Jl '62.   (MIRA 15:7)
    (Germany, West—Potatoes)(Germany, West—Potato digger (Machine))

YAKOVLEV, D.

Psychological aspects of physical education. Prof.-tekh. obr. 22 no.9:
32-33 S '65.   (MIRA 18:9)

1. Direktor professional'no-tekhnicheskogo uchilishcha No.23, Lenin-
grad.

YAKOVLEV, D.A

IRANIY, Pavel Bernardovich, inzhener; ZYBIN, Kirill Yur'yevich, UDAL'TSOV, A.N., glavnyy redaktor; YAKOVLEV D.A., inzhener, redaktor

[Pulse microohmmeter. Absolute permeameter] Impul'snyi mikrometr. Absoliutnyi pronitsmer. Moskva, 1956. 10 p. (Pribory i stendy. Tema 5, no. P-56-475)   (MLRA 10:10)

1. Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii. Filial.
          (Ohmmeter)   (Permeameter)

YAKOVLEV, D.A.

SHTEYNBOK, G.Yu., inzh., red.; YAKOVLEV, D.A., inzh., red.

[Equipment for the polarization of barium titanate plates.
Power coupler in the decimeter range] Ustanovka dlia poliarizatsii
plastin titanata barria. Otvetvitel' moshchnosti detsimetrovogo
diapazona. Moskva, 1956. 10 p. (Pribory i stendy. Tema 6, no.
P-56-506)

(MIRA 10:12)

1. Moscow. Vsesoiuznyy institut nauchnoy i tekhnicheskoy informatsii.
(Polarization (Electricity)) (Electric cables) (Barium titanate)

BOYDEX, Semen Abramovich, inzhener; YAKOVLEV, D.A., inzhener, redaktor;
UDAL'TSOV, A.N., glavnyy redaktor

[Impulse device for acoustical measurement] Impul'snaia ustanovka
dlia akusticheskikh izmerenii. Tema 7, no.P-56-408. Moskva,
Akademiia nauk SSSR, 1956. 20 p.
        (Sound--Measurement)   (MIRA 10:3)

BRANFENBRENER, Anatoliy Aleksandrovich; LYUSTIBERG, V.F., inzh.,
ved. red.; YAKOVLEV, D.A., inzh., red.; SOROKINA, T.M.,
tekhn. red.

[Central wobbulator for visual slignment of the IF of AM and
FM channels of radio receivers]TSentralizovannyi generator
kachaiushcheisia chastoty dlia vizual'noi nastroiki AM i
ChM traktov promezhutochnoi chastoty radioveshchatel'nykh
priemnikov. Moskva, Filial Vses.in-ta nauchn. i tekhn.
informatsii, 1958. 13 p. (Peredovoi nauchno-tekhnicheskii i
proizvodstvennyi opyt. Tema 36. No.P-58-114/15)

(MIRA 16:3)

(Radio--Receivers and reception)
(Oscillators, Electron-tube)

SOKOLIK, Anatoliy Ioniasovich; CHARNETSKIY, Konstantin Konstantinovich;
FOMICHEV, Aleksey Georgiyevich; LYUSTIBERG, V.F., inzh., ved.
red.; YAKOVLEV,D.A., inzh.,red.; SOROKINA, T.M., tekhn.red.

[High-voltage OK-19M oscillograph system]Vysokovol'tnaia os-
tsillograficheskaia ustanovka OK-19M. Moskva, Filial Vses. in-
ta nauchn.i tekhn.informatsii, 1958. 15 p. (Peredovoi nauchno-
tekhnicheskii i proizvodstvennyi opyt. Tema 35. No.P-58-25/2)
                                        (MIRA 16:3)
          (Cathode ray oscillograph)

SOLOMONOV, Vasiliy Georgiyevich; LYUSTIBERG, V.F., inzh., ved. red.;
    YAKOVLEV, D.A., inzh., red.; SOROKINA, T.M., tekhn. red.

[Device for synthesizing characteristics (magazine with various
characteristics)]Ustroistvo dlia sinteza kharakteristik (magazin
kharakteristik). Moskva, Filial Vses. in-ta nauchn. i tekhn. in-
formatsii, 1958. 34 p. (Peredovoi nauchno-tekhnicheskii i proiz-
vodstvennyi opyt. Tema 36. No.P-58-9/4)   (MIRA 16:3)
    (Television--Equipment and supplies) (Electric filters)
                        (Attenuators (Electronics))

LENOV, Nikolay Nikolayevich, kand. tekhn. nauk; GRYAZNOV, Georgiy
Mikhaylovich, inzh.; LYUSTIBERG, V.F., inzh., ved. red.;
YAKOVLEV, D.A., inzh., red.; SMIRNOV, B.M., tekhn. red.

[Electronic differential analyzer]Elektronnyi differentsial'-
nyi analizator. Moskva, Filial Vses. in-ta nauchn. i tekhn.
informatsii, 1958. 61 p. (Peredovoi nauchno-tekhnicheskii i
proizvodstvennyi opyt. Tema 40. No.P-58-43/2) (MIRA 16:3)
        (Electronic differential analyzers)

AUTHOR: Yakovlev, D.A.   SOV/115-58-1-27/50

TITLE: The Effective Plane of Coils for Measuring Magnetic Induc-
                tion (Effektivnaya ploshchad'katushek dlya izmereniya
                magnitnoy induktsii)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 1, pp 55 - 56 (USSR)

ABSTRACT: Measurements of magnetic induction by a ballistic galvano-
                meter or a fluxmeter are made with the aid of a sensing
                coil. The constant of a sensing coil is equal to the
                product of the number of the coil's turns and the coil's
                effective plane. The author calculates the constant and
                the effective plane of a round (straight cylindrical) uni-
                formly wound coil, and of a rectangular coil, and evolves
                equations for the approximate determination of the effective
                plane for both these common cases.

                1. Magnet coils--Properties   2. Mathematics

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16.4100

25823
S/142/60/003/006/013/016
E032/E114

AUTHOR: Yakovlev, D.A.

TITLE: On the best approximations of a linear function by
               harmonic polynomials

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
               Radiotekhnika, 1960, Vol.3, No.6, pp. 654-657

TEXT: The linear function to be approximated to in the
interval $(-\pi, \pi)$ is of the form $y_1 = \tau$ and the approximating
function is taken in the form

$$y_2(n) = \sum_{k=1}^{n} A'_k (n) \sin k\tau$$

Let the difference between these two functions be denoted by

$$\ell(n) = y_1 - y_2(n).$$

In order to obtain the best approximation to the function y_1 by
the function $y_2(n)$ it is necessary and sufficient for the
modulus of the difference $\ell(n)$ over the above interval to reach

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On the best approximations of a ....

its maximum value L(n) a finite number of times, and the sign of the deviation should change in successive maximum deviations. Figs. 1, 2 and 3 show graphs of the deviation ξ(n) for n = 1, 2 and 3 respectively. When n = 1, y_2 is of the form

$$y_2(1) = A_1(1) \sin \tau,$$

while for n = 2 and n = 3 the forms are

$$y_2(2) = A_1(2) \sin \tau - A_2(2) \sin 2\tau$$

and

$$y_2(3) = A_1(3) \sin \tau - A_2(3) \sin 2\tau + A_3(3) \sin 3\tau.$$

The general expression for the approximating function, which is in fact the best approximation to the linear function in the sense of Chebyshev, is:

$$y_2(n) = \sum_{k=1}^{n} (-1)^{k+1} A_k(n) \sin k\tau.$$

In order to determine the amplitudes $A_k(n)$, the modulus of the

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S/142/60/003/006/013/016
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On the best approximations of a ....

maximum deviation $L(n)$ and the interval over which the best approximation is obtained, it is necessary to solve a system of equations relating these quantities. The function $\ell(n)$ has an odd symmetry since all the terms in it have such symmetry. This can be used to reduce the number of equations in the system determining the required best approximation by a factor of 2. As an example, the following system for $n = 2$ is quoted:

$$L(2) = \tau_1 - A_1(2) \sin \tau_1 + A_2(2) \sin 2\tau_1$$
$$-L(2) = \tau_2 - A_1(2) \sin \tau_2 + A_2(2) \sin 2\tau_2$$
$$L(2) = \tau_3 - A_1(2) \sin \tau_3 + A_2(2) \sin 2\tau_3 \qquad (1)$$
$$0 = 1 - A_1 \cos \tau_1 + 2A_2(2) \cos 2\tau_1$$
$$0 = 1 - A_1(2) \cos \tau_2 + 2A_2(2) \cos 2\tau_2$$

where τ_1, τ_2 and τ_3 are the values of the argument for which the function $\ell(n)$ reaches the maximum values (Fig.2). In view of the above symmetry, the best approximation is obtained in the interval $(-\tau_3, \tau_3)$. The equations given in (1) are

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S/142/60/003/006/013/016

On the best approximation of a E032/E114

transcendental equations and hence can only be solved approximate-
ly. An analogous situation may occur with other values of n.
In practice   it is important to have tables giving the various
best approximations. These are given in Tables 1-3. The latter
tables give the magnitudes of the maximum values of L(n), the
length of the interval $(-\tau_n, \tau_n)$ over which the best
approximations can be obtained, and the amplitudes $A_k(n)$ for
n = 1, 2 and 3.
There are 3 figures, 3 tables and 5 Soviet references.

ASSOCIATION: Institut radiotekhniki i elektroniki, AN SSSR
             (Institute of Radioengineering and Electronics,
             AS USSR)

SUBMITTED: to the Editors of NDVSh, August 4, 1959.
             to the editors of Izv. vuz Radiotekhnika,
             February 4, 1960.

Card 4/7

26803
S/142/61/004/002/005/010
E033/E435

9,4220

AUTHOR: Yakovlev, D.A.

TITLE: Kinematic theory of forming very short electron bunches
            by a klystron-type buncher

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika,
            1961, Vol.4, No.2, pp.198-203

TEXT: Periodical sequences of bunched electrons are used in many
physical experiments.   The aim of this article is to determine
how short a bunch can be produced in a klystron-type buncher and
how the parameters may be selected to obtain this shortest bunch.
The problem is investigated by applying kinematic theory to
obtain an expression for the length of the shortest attainable
bunch and the function theory of least deviation from zero to
obtain the conditions for shortest bunching.   The method is
applied to a single-resonator and to two-resonator bunchers of the
klystron-type.   The circuit for a single-resonator buncher is
shown in Fig.1.   The transit angle τ_{20} of the electrons at
point A, a distance ℓ_1 from the middle of the modulating
resonator aperture, depends on the transit angle τ_1 of the
electrons at the centre of this aperture and is given by the
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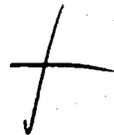
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kinematic theory as

$$\tau_{20} = \tau_1 - X \sin \tau_1 + \theta_0 \qquad (1)$$

where $\tau = \omega t$, t = time, ω = angular frequency of the modulating voltage, X is the bunching parameter at point A, θ_0 is the transit angle of unexcited electrons over the distance ℓ_1. θ_0 is constant and does not influence the bunching. Therefore, the expression is simplified to

$$\tau_2 = \tau_1 - X \sin \tau_1 \qquad (2)$$

The bunches will have clearly defined boundaries only when $X > 1$ and only this case is considered. The graph of $\tau_2 = f(\tau_1)$ over a period of the modulating voltage for a single value of $X > 1$ is shown in Fig.2, where θ_3 is the electron bunching angle over the modulating voltage period and θ_c is the "bunch" angle, i.e. the length of the bunch expressed in angular measure. The function $\tau_2 = f(\tau_1)$ has two extreme points in the range $(-\pi, \pi)$, corresponding to the roots of the equation

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If straight lines are drawn, parallel to the axis, through the extreme points, then each line will intersect the curve $\tau_2 = f(\tau_1)$ at some point. In the region bounded by the straight lines and the ordinates of the intersection points, the function $\tau_2 = f(\tau_1)$ satisfies the P.L.Chebyshev conditions for least deviation from zero, indicating the formation of the shortest bunches. To obtain the optimum value of X, some other auxiliary condition is necessary, e.g. the fraction of all the emitted electrons which is bunched, or a specified bunch length. In amplifying klystrons, the auxiliary condition is to obtain the maximum first harmonic amplitude, for which $X = 1.84$. Graphs of θ_3 and θ_c plotted against X are produced, from which the electric parameters of single-resonator bunchers may be derived. The same method is applied to two-resonator bunchers (Fig.4) for which

$$\tau_{30} = \tau_1 - X \sin(\tau_1 - \theta) + \frac{X_{12} \cdot X_{23}}{2} \sin\left(2\tau_1 - \beta - \frac{\pi}{2}\right) +$$
$$+ \theta_1 + \theta_2 + \frac{X_{12} \cdot X_{23}}{2} \cos\beta. \tag{4}$$

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is applicable. X_{12} is the parameter of the bunching between the first and second resonators; X_{23} is the parameter of the bunching between point A and the second resonator under the action of the second resonator aperture voltage only; θ_1 is the transit angle of an unexcited electron from the first to the second resonator; θ_2 is the transit angle of such an electron from the second resonator to point A ; X_{13} is the parameter for bunching between the first resonator and point A without account of the effect of the second resonator,

$$X = \sqrt{X_{13}^2 + X_{23}^2 + 2X_{23}X_{13}\sin\beta,}$$

(5)

$$\theta = \operatorname{arctg}\left(\frac{X_{23}\cos\beta}{X_{13}+X_{23}\sin\beta}\right).$$

(6)

and $\beta - \theta_1$ is the phase difference between the voltages on the first and second resonators. θ_1, θ_2 and

$\dfrac{X_{12} \cdot X_{23}}{2}$ cos β do not affect the bunching and therefore only the

expression:
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$$\tau_3 = \tau_1 - X \sin(\tau_1 - 0) + \frac{X_{12} \cdot X_{23}}{2} \sin\left(2\tau_1 - 3 - \frac{\pi}{2}\right). \qquad (7)$$

is analysed.   A graph of $\tau_3 = f(\tau_1)$ is produced and the region of least deviation from zero determined.   The optimum value of X and its relation to $X_{12} \cdot X_{23}$ are found.   Finally the bunching properties of single- and two-resonator bunchers are compared. There are 7 figures and 7 Soviet references.

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SUBMITTED: November 10, 1959 (to NDVSh)
February 4, 1960 (to Izv. VUZ Radiotekhnika, initially)
June 13, 1960 (after revision)

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S/089/61/011/005/009/017
B102/B104

24 6731

AUTHORS: Zhileyko, G. I., Yakovlev, D. A.

TITLE: Experimental investigation of a linear accelerator with an
           electron prebuncher

PERIODICAL: Atomnaya energiya, v. 11, no. 5, 1961, 447 - 449

TEXT: The authors investigated the dependence of the width of the
spectrum and of the beam current on the main parameters of the experimental
arrangement:
The double-resonator prebuncher was
fed with h-f current via cables in-
cluding phase shifters. The ex-
periments were made with two, as
well as with one, resonator. For
both, the width ΔU of the spectrum
of the accelerated electrons as
well as the current I of the
electron beam were measured as functions of the h-f phases in the

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